EXHIBIT JJJ TO CISNEROS DECLARATION REDACTED VERSION

UNITED STATES DISTRICT COURT

NORTHERN DISTRICT OF CALIFORNIA

SAN JOSE DIVISION

IN RE: HIGH-TECH EMPLOYEE ANTITRUST LITIGATION)	
)	No. 11-CV-2509-LHK
THIS DOCUMENT RELATES TO: ALL ACTIONS.)	

ATTORNEYS' EYES ONLY

VIDEO DEPOSITION OF LAUREN STIROH, Ph.D.

December 9, 2013

REPORTED BY: GINA V. CARBONE, CSR NO. 8249, RMR, CCRR

09:31:13 in The Metropolitan Corporate Counsel. What is
09:31:16 The Metropolitan Corporate Counsel?
09:31:25 A. I don't know much about it, other than --
09:31:27 certainly as I sit here today, other than to say it's a
09:31:29 publication. I just don't recall much about that.
09:31:32 Q. So did the Willkie Farr & Gallagher attorneys
09:31:35 that you list there invite you to help them with that
09:31:37 contribution?
09:31:38 A. Yes.
09:31:38 Q. What did they tell you about the journal or
09:31:40 publication, if anything, when they invited you to help
09:31:43 them?
09:31:44 A. I don't recall those conversations right now.
09:31:48 Q. Well, do you at least understand that that
09:31:50 publication is oriented towards an audience of in-house
09:31:55 corporate lawyers?
09:31:57 A. It wouldn't surprise me, based on the name of
09:31:59 the publication, but I just don't really recall very
09:32:01 much about it.
09:32:04 Q. Who wrote -- well, what was your -- what were
09:32:08 the respective roles of the different authors in writing
09:32:10 that article?
09:32:14 If contributions is a better word, use
09:32:17 contributions.
09:32:17 A. I think my contribution was on the economics of

09:32:21 standard setting and the things an economist would look
09:32:23 at to look at the impact of standard setting on a
09:32:27 royalty rate. And then the lawyers talked more about
09:32:28 the legal aspect and the particular case that we were
09:32:31 using as a -- as an example in that matter.

09:32:34 Q. Had you worked with any of those attorneys
09:32:36 before they invited you to help them with this article?

09:32:41 A. I think so, yes.

09:32:43 Q. So what -- what -- in what capacity had you
09:32:46 worked with them?

09:32:47 A. I had worked with Mr. Rooney on a matter, I
09:32:52 think it was a damages matter. I wasn't the testifying
09:32:56 economist on that, but I had interaction with him on
09:32:59 that matter.

09:33:04 Possibly Mr. Chang on a different matter, but I
09:33:07 can't remember if that was before or after this article.

09:33:14 Q. Would you agree with me that -- how many pages
09:33:16 long was that article?

09:33:22 A. I don't remember. Certainly it matters how you
09:33:25 print it out. When you print it out in The Metropolitan
09:33:28 Corporate Counsel, it may be in several columns and fit
09:33:31 onto a single page. If it's on a computer, it would
09:33:33 follow the typical pagination and would be more pages,
09:33:36 but it's not very lengthy.

09:33:40 Q. Is it -- is it fair to say -- would you agree

09:33:43 that part of the purpose of writing such articles is to
09:33:47 market your services and those of the attorneys to
09:33:50 in-house corporate lawyers?
09:33:51 MR. KIERNAN: Object to form.
09:34:03 THE WITNESS: Certainly could be, yes.
09:34:05 MR. GLACKIN: Q. What about the NERA books
09:34:07 that you've contributed to; did those also have a
09:34:10 marketing purpose?
09:34:12 A. They have a marketing purpose and I think a
09:34:15 part of our goal is to provide an education purpose.
09:34:18 Q. I mean, I only ask because I get these books
09:34:20 for free sometimes, NERA just sends them to me. So I'm
09:34:23 wondering, are they sending them to me because they want
09:34:25 to advertise their services and the services of
09:34:28 economists like yourself?
09:34:29 MR. KIERNAN: Object to form.
09:34:31 THE WITNESS: I don't know what the reason
09:34:32 would be that we have sent them to you. I hope you
09:34:34 enjoyed them. But part of their -- the purpose behind
09:34:40 them is what we feel is an education purpose.
09:34:42 MR. GLACKIN: Q. So part of the purpose is
09:34:43 education and part of the purpose is marketing; are
09:34:45 you willing to agree with that?
09:34:46 A. I am.
09:34:50 Q. And then "Considerations in Defining the

09:34:53 Relevant Product Market for Antitrust Analysis," that
09:34:55 was a presentation you gave at the American Bar
09:34:57 Association Spring Meetings, correct?
09:35:00 A. Correct.
09:35:00 Q. And part of the benefit of giving a
09:35:02 presentation at those meetings is, again, there is a
09:35:03 marketing benefit to it, right?
09:35:06 A. Potentially, there could be, yes. I was
09:35:08 invited to give that presentation, that there was a
09:35:10 paper that went along with it.
09:35:12 Q. Who invited you to give the presentation?
09:35:14 A. The organizers of the ABA Spring Meeting.
09:35:19 Q. Well, there is a lot of them. Which one was it
09:35:21 in particular, do you remember?
09:35:22 A. I don't remember.
09:35:23 Q. Was it someone you had worked with before?
09:35:26 A. I don't think so.
09:35:41 Q. In your -- your chapter on, "Proving Causation
09:35:57 in Damages Analyses," it's also written for an audience
09:35:59 of attorneys, correct?
09:36:03 Let me rephrase that. It is principally
09:36:07 written for an audience of attorneys, correct?
09:36:09 A. It is specific to proving causation in the
09:36:12 context of a litigation. In that sense, yes.
09:36:18 Q. Is there anything in there that I would need to

09:36:20 have a degree in statistics to understand as a lawyer?
09:36:23 MR. KIERNAN: Object to form.
09:36:27 THE WITNESS: I don't recall. It was certainly
09:36:28 my goal to write it in such a way that it would be
09:36:31 understandable to someone without a degree in
09:36:33 statistics.
09:36:34 MR. GLACKIN: Q. How many pages long is
09:36:35 that article?
09:36:36 A. I don't remember.
09:36:37 Q. More than ten or less?
09:36:40 A. I don't remember.
09:36:45 Q. Are you familiar with the concept of Granger
09:36:48 causality?
09:36:49 A. Yes.
09:36:49 Q. What is the concept of Granger causality?
09:36:56 A. It is looking at the frequency with which one
09:37:00 event follows another event, generally in a time series.
09:37:04 And from that, if there is the consistency of one event
09:37:08 occurring and then another event occurring within some
09:37:10 defined time period, whether that supports an inference
09:37:13 of causation that the first event caused the second
09:37:17 event to occur.
09:37:18 Q. And you wrote about Granger causality in your
09:37:22 chapter in "Proving Causation in Damages Analyses,"
09:37:24 correct?

09:37:25 A. I refer to it there, yes.
09:37:26 Q. You refer to it as one means of inferring causation, correct?
09:37:31 A. I don't think I refer to it -- well, maybe I do, but to the best of my recollection, the reason I mention Granger causality is to talk about the cases where it does not work. I think I bring up the Christmas cards do not cause Christmas.
09:37:45 Q. Well, do you agree with Professor Granger that under the circumstances he outlines, causation can sometimes be inferred?
09:37:56 MR. KIERNAN: Object to form.
09:37:57 THE WITNESS: I don't recall the circumstances that he outlines as a statistical matter. And given the situation, it may be possible to infer causation if an event typically or routinely follows a prior event. But there may be other things that cause both of those events to occur and cause both of them to occur in a pattern where one happens first and the other happens second without causation being inferred. So you would need to look at something broader than just the statistical output.
09:38:23 MR. GLACKIN: Q. So you are aware that Professor Granger won the Nobel Prize, right?
09:38:28 A. I think so, yes.

10:04:36 that I have in my report is that the -- that having a conduct variable that turns off at the start time and then turns off at the end time is going to sweep into it anything that's not adequately controlled for elsewhere in the report -- in the analysis.

10:04:52 And to the extent that there is an overlap in the periods of the agreement, so even assuming that the agreements have an impact, that the impact could be measurable and the impact is to lead to undercompensation of the class, if all of that is true, and you have two agreements that have an overlap in period, then there is nothing in the analysis that tells you what of that measured undercompensation comes from the one at issue versus one that was concurrent with the one at issue, even if the concurrency was for a part but not all of the time.

10:05:26 MR. GLACKIN: Q. When you say the agreements have an overlap, are you saying this problem arises if there is any overlap at all between the time periods of the agreements?

10:05:38 A. If the theory is correct, that there is an impact on undercompensation from the nature of the agreement, and there is a period of overlap, then the model has no way to distinguish what part of that undercompensation comes from the agreement that we're

10:05:52 trying to measure the effect of, and what comes from the
10:05:54 agreement that we are not trying to measure the effect
10:05:56 of.
10:05:57 Q. So let's call -- I'm going to refer to those
10:05:59 agreements as the agreements were not trying to measure
10:06:03 the effect as lawful agreements.
10:06:09 (Reporter clarification.)
10:06:09 THE WITNESS: Okay.
10:06:09 MR. GLACKIN: Q. Suppose you had a lawful
10:06:10 agreement that began in 1995 and continued up to the
10:06:13 present day; why would the regression analysis, as
10:06:19 it is constructed, fail to control for the existence
10:06:22 of that agreement?
10:06:24 MR. KIERNAN: Object to form.
10:06:32 THE WITNESS: I think that -- I would want to
10:06:37 look a little bit further to see what the nature of the
10:06:39 agreement was specifically, and who the two parties were
10:06:44 to the agreement. But just on the hypothetical, an
10:06:47 agreement that spans the entirety of the period, then if
10:06:51 there is an impact on undercompensation from the
10:06:54 agreement, it's not necessarily going to be uniform
10:06:56 throughout the entire period.
10:06:58 And because there are not sufficient controls
10:07:01 during what we're calling the damage period, 2005 to
10:07:07 2009, and there are events within that damage period,

10:07:11 undercompensation that should be connected to the lawful agreement can be wrapped up in undercompensation that is coming from the -- from the recession or other compensation events at the defendants that happened inside the damage period and not under the -- outside the damage period.

10:07:27 They're being swept into compensation where it should be that they are really attributed to different causes. And if one of those causes is a lawful agreement, even if it spans the entirety of the period, could still be swept into damages.

10:07:40 MR. GLACKIN: Q. Is it your opinion that that actually happened with respect to any of these four lawful agreements that you've identified here?

10:07:48 MR. KIERNAN: Object to form.

10:07:50 THE WITNESS: As I sit here, I don't recall what the dates were and whether they, all or any of them, span 1995 through 2011, but it is my general opinion that what is being picked up by Dr. Leamer's conduct variable includes more events than certainly the conduct that we're trying to measure at issue. And I've given you an example of how one of those agreements may be infecting the analyses.

10:08:11 MR. GLACKIN: Q. So what I'm asking is, is it your affirmative opinion that any one of these

10:09:32 MR. GLACKIN: Q. Well, I only ask because you said that it was our theory that the plaintiffs had -- the agreements had this affect regardless of their term, so I was trying to understand what you meant by that.

10:09:44 MR. KIERNAN: There is not a question pending.

10:09:46 MR. GLACKIN: Q. So what did you mean by that?

10:09:48 A. That I was there referring to the way that Dr. Leamer puts them into his analysis, which is where this conflation can become an issue by not separating them out.

10:09:58 So he has a conduct period that turns on whenever the first agreement that a company enters into occurred, and then turns off in March 2009. And there is no correction, adjustment or control for different terms of the different agreements.

10:10:15 Q. Was there, in fact, a do-not-cold-call agreement between Pixar and Intel that was comparable in terms and scope to the do-not-cold-call agreement between Intel and Google?

10:10:27 MR. KIERNAN: Object to form.

10:10:29 THE WITNESS: I don't recall, as I sit here, what the differences are in those.

10:10:33 MR. GLACKIN: Q. Well, do you have -- are

10:10:34 you expressing an opinion about that one way or the
10:10:36 other? I mean, this is important. I'm trying to
10:10:37 understand it.
10:10:38 If your answer is that you don't know because
10:10:41 you haven't studied it, then you can tell me that. Or
10:10:43 if your answer is that you have an opinion but you
10:10:45 didn't put it in your report, you can tell me that.
10:10:47 So my question -- or if it's in your report
10:10:50 somewhere and I didn't find it, you can tell me that.
10:10:52 My question is, is it your opinion that Pixar
10:10:55 and Intel had a do-not-cold-call agreement that was
10:10:58 comparable in terms and scope and duration to the
10:11:03 do-not-cold-call agreement between Intel and Google?
10:11:06 MR. KIERNAN: Object to form.
10:11:06 THE WITNESS: I am not offering an opinion on
10:11:09 that subject.
10:11:10 MR. GLACKIN: Q. Are you offering an
10:11:11 opinion on that subject with respect to any of these
10:11:13 other lawful agreements that are listed here in
10:11:15 paragraph 10?
10:11:16 MR. KIERNAN: Object to form.
10:11:17 THE WITNESS: I am not.
10:11:18 MR. GLACKIN: Q. Okay. So you are
10:11:19 identifying -- you are identifying a hypothetical
10:11:22 issue, right?

10:11:24 MR. KIERNAN: Object to form.

10:11:28 THE WITNESS: To the extent that no agreements exist between these parties that overlaps with the time period that is in the damage period that Dr. Leamer analyzes, then it is a hypothetical issue.

10:11:45 My recollection was that there is overlap of the agreements that were no longer being challenged, so it is more than a hypothetical issue. But as I sit here today, it's not something that I've looked at for some time, so I just don't have the information at my fingertips to be able to give you a more concrete answer.

10:12:03 MR. GLACKIN: Q. Are you intending to offer an opinion about the terms, scope, or duration of any of these four lawful agreements?

10:12:11 MR. KIERNAN: Object to form.

10:12:12 THE WITNESS: I am not intending to offer an opinion as to facts regarding the agreements. My opinions would be related to what Dr. Leamer has done with respect to the agreements. But I don't have -- and take, as fact, information that is in the record about those agreements at issue. But I'm not the person that would tell you what those facts are.

10:12:36 MR. KIERNAN: If you are about to switch, we've been going over an hour.

10:12:39 MR. GLACKIN: Sure. Would you like a break?
10:12:40 THE WITNESS: Sure.
10:12:41 MR. GLACKIN: Okay.
10:12:41 THE VIDEOGRAPHER: This is the end of video No. 1. The time is 10:12 a.m. We're going off the record.
10:12:46 (Recess taken.)
10:24:04 THE VIDEOGRAPHER: This is the beginning of video No. 2 in the deposition of Dr. Stiroh. The time is 10:24 a.m. We're back on the record.
10:24:20 MR. GLACKIN: Q. In that same paragraph we were talking about you say, "Finally, it is my understanding from counsel that Intel's participation in a DNCC agreement with Google may have begun in spring of 2006, as opposed to spring of 2005," et cetera, et cetera. I'm not going to keep reading.
10:24:38 First question is, what counsel gave you that understanding?
10:24:48 A. I don't remember specifically if it was logically counsel for Intel. But in discussions in a group phone call, I don't remember who was speaking with respect to that.
10:25:00 I reviewed the information that's referenced in footnote 15 as well, where there seemed to be documents

11:08:52 MR. KIERNAN: Object to form.
11:08:56 THE WITNESS: I don't know that you can say
11:08:58 that outside of the litigation context, and then have
11:09:01 that be -- have any meaning for what statement is
11:09:04 written by an attorney. That may be, if outside of the
11:09:06 litigation context, somebody is talking about 10-Ks, the
11:09:10 10-Ks may have been written by the attorneys for the
11:09:12 firm, or some part of it might have been.
11:09:15 Contracts. If somebody is doing an analysis of
11:09:17 contracts and looking at publicly available information
11:09:20 about contracts, the contracts may have been drafted by
11:09:21 attorneys.
11:09:22 I think it is not unusual inside a litigation
11:09:25 context to have information that may be drafted by
11:09:29 attorneys, just given the fact that it is litigation.
11:09:32 MR. GLACKIN: Q. Can you point me to any
11:09:34 authority, scholarly authority, that approves the
11:09:41 reliance by economists on witness statements drafted
11:09:45 by lawyers?
11:09:47 MR. KIERNAN: Object to form.
11:09:50 THE WITNESS: You are asking me for a scholarly
11:09:53 authority?
11:09:54 MR. GLACKIN: Q. Right.
11:09:58 A. I can't -- I don't know what type of a
11:10:01 scholarly authority would even have that type of a

statement. It is, I think, generally accepted in a litigation context, where economists are offering expert opinions, that they can rely on what you referred to a minute ago as hearsay. Information that they've heard from other parties to the case.

I am not opining as to the fact of that information. I'm taking it as an input that informs my analysis. That to the extent that facts are established to be different from how I have understood them, then I will adjust my opinions as necessary and as appropriate.

Q. Okay. In your background section, there is a number of paragraphs where you discuss the fact that average compensation increases, and average hiring increases during the class period. Do you -- just in general terms, are you familiar with the opinions that I'm talking about?

A. I'm generally familiar with what's in the background section, yes.

Q. Okay. Does the fact -- what is the relevance of -- to your opinions of the fact that compensation increased -- average compensation increased during the class period?

A. That there is not an easily observable relationship with the start and stop date of the damage period, as assessed by Dr. Leamer in his report, with

11:11:36 compensation patterns at each of the seven companies.
11:11:38 We don't see a change in average compensation at the
11:11:43 start of the alleged damage period and at the end of the
11:11:47 alleged damage period. That is consistent across the
11:11:50 companies.
11:11:51 Generally, compensation continues to increase
11:11:52 during the alleged damage period. And I guess one
11:11:55 other -- the pattern does not look to be different in
11:12:01 the damage period compared to outside the damage period
11:12:05 at either end.
11:12:06 Q. Is it necessary for there to be such an easily
11:12:09 observable relationship with the start and stop date in
11:12:11 order for the agreements to have impacted compensation?
11:12:16 MR. KIERNAN: Object to form.
11:12:16 THE WITNESS: It is not necessary. It is
11:12:18 something that, my understanding of Dr. Leamer's earlier
11:12:21 reports, that he looked for such a relationship, and he
11:12:25 seemed to view one, looking at all of the companies
11:12:29 averaged together, and took that as -- I can't now
11:12:33 remember what word he specifically uses, but motivation
11:12:37 I think is maybe -- it's either his word or one that
11:12:40 I've said in the report -- for the analysis that he then
11:12:43 conducts. And I observe that same motivation does not
11:12:46 seem to appear when you look at each of the companies
11:12:48 individually.

11:12:49 MR. GLACKIN: Q. So let me ask you a question. I'd like you to suppose, for example, that you have a conspiracy to fix the prices of some high tech component, like any of the half dozen that have been brought in this district over the last ten years.

11:13:03 And then suppose that when you look at the period of the conspiracy prices for the component are going down through the conspiracy; is that evidence that the conspiracy had no effect on price?

11:13:14 MR. KIERNAN: Object to form.

11:13:17 THE WITNESS: On its own it would not be. You may look at the rates of change of the decline, and you would look to other factors, which is exactly what I do in my report as well. But the observation that Dr. Leamer made that there seemed to be a difference in the growth rate for compensation in 2004 and 2011 does not bear up when you look at each of the companies individually.

11:13:39 And to the extent that that observation is motivation for the analysis that he did, I don't think -- I think the motivation is lacking when we do a further investigation and see that there isn't a consistent pattern across the companies.

11:13:51 MR. GLACKIN: Q. So the only -- so the

11:20:09 during the period is a reasonable starting place or a relevant factor in concluding that this conduct had an impact on compensation?

11:20:17 MR. STONE: Can I have that question back. I'm sorry.

11:20:22 (Record read as follows: What's your authority for the proposition that the pattern -- whether or not there is a pattern of change during the period is a reasonable starting place or a relevant factor in concluding that this conduct had an impact on compensation?)

11:20:39 MR. KIERNAN: Object to form.

11:20:44 THE WITNESS: If one were to conclude that --

11:20:56 (Reporter clarification.)

11:20:56 THE WITNESS: If one were to conclude that conduct had an impact on compensation, then you would need to establish that that impact is being driven by the conduct and not other factors.

11:21:07 In conducting a regression analysis, you -- a first stage is understanding the data and looking at the data. And the authority for that, besides my own experience and looking at the specific data that has been produced in this case, as I will tell you just about every econometrics textbook, even those that I have not seen, but I think I reference Peter Kennedy as

11:21:31 an example in my -- in my materials.
11:21:34 MR. GLACKIN: Q. You did.
11:21:34 A. Okay.
11:21:35 Q. So Peter Kennedy says this.
11:21:40 Does Peter Kennedy say this? Is that what you
11:21:42 are saying?
11:21:43 A. Peter Kennedy does not say the words that I
11:21:45 just said. He does say look at the data. I think he's
11:21:49 got ten commandments and it is probably in the top
11:21:54 three.
11:21:55 Q. So there is a whole literature, I'm sure that
11:21:58 you are aware of, about the effect of antitrust
11:22:03 conspiracies. Are you aware of that literature?
11:22:07 MR. KIERNAN: Object to form.
11:22:10 THE WITNESS: I am aware of literature talking
11:22:14 about various types of conspiracies and whether there
11:22:20 is, in cases, a measurable impact of alleged
11:22:22 conspiracies, or even acknowledged conspiracies, or even
11:22:27 agreements that are not conspiracies. But there is
11:22:30 academic literature on the subject of what happens when
11:22:32 firms agree and act in concert with one another, as
11:22:35 opposed to independently of one another.
11:22:38 MR. GLACKIN: Q. Is there any authority in
11:22:40 that literature for the proposition that the absence
11:22:42 of a change in pattern during versus before and

11:22:47 after the conspiracy is relevant to understanding
11:22:51 whether or not the conspiracy had any effect?
11:22:55 MR. KIERNAN: Object to form.
11:22:57 THE WITNESS: Can you ask it again.
11:22:57 MR. GLACKIN: Q. Is there any authority in
11:22:58 that literature for the proposition that the absence
11:23:00 of a change in pattern during versus before and
11:23:04 after the conspiracy is relevant to understanding
11:23:07 whether or not the conspiracy had any effect?
11:23:11 MR. KIERNAN: Object to form.
11:23:11 THE WITNESS: So the literature that looks at a
11:23:13 before and after period, that is looking at -- for a
11:23:17 change in pattern. The examples that I can call to
11:23:23 mind, and I can't tell you specifically what it is, more
11:23:25 than just a recollection of what the page looks like, is
11:23:29 looking at a chart and a before and after period and a
11:23:32 dotted line that separates before to after, and drawing
11:23:35 the reader's attention to, look, this looks different
11:23:38 from that.
11:23:38 Now, that's not the end point, it's not the
11:23:40 final conclusion, it's a starting place. It is looking
11:23:43 at the data, prior to doing an analysis, and noting that
11:23:46 there is a difference in the after period than before
11:23:49 period. And quite often, the noting of that difference
11:23:53 is the inspiration for lawsuits to say what was it that

01:32:40 pocket that you are going to surprise us with later,
01:32:42 correct?
01:32:43 MR. KIERNAN: Object to form.
01:32:46 THE WITNESS: I don't think I can say whether
01:32:47 or not you will be surprised. It is my -- not my
01:32:51 intention to surprise you. But the factors that I think
01:32:55 have not been affected are the ones that I've described
01:32:58 here, the job title and promotion history, but also the
01:33:01 other factors in the background section where I talk
01:33:03 about the ways that each of the companies individually
01:33:06 responded to the recession and individual compensation
01:33:10 events in the, you know, nine-year period that is being
01:33:14 studied.
01:33:14 MR. GLACKIN: Q. So the factors you
01:33:15 reference here in paragraph 150 as having been
01:33:18 omitted are all factors that you discuss somewhere
01:33:21 else in your report, correct? That's what I'm
01:33:23 trying to get to.
01:33:33 A. Yes. The omitted factors that I am talking
01:33:35 about are the ones that I am talking about somewhere in
01:33:38 the report, not necessarily just in --
01:33:40 Q. Correct. Not --
01:33:41 A. -- this section.
01:33:42 Q. I understand.
01:33:43 A. Yes.

01:33:46 Q. I'd like you to turn to paragraph 161, please.
01:33:53 Okay. You say that, "A well-known effect of misspecification and omitted variables in regression analyses is that coefficients can be estimated with the 'wrong' sign." You cite to Dr. Kennedy's book.
01:34:09 How did you become familiar with Dr. Kennedy's book?
01:34:20 A. I think it is a textbook that is frequently used in econometrics programs that some of my colleagues and people that I work with used it in their econometrics courses. I think it is very clearly written, and so it's one that I cite frequently.
01:34:36 Q. Okay. Are you saying that the fact that the age coefficients, in your opinion, have the wrong sign on them is a basis to conclude the model is misspecified?
01:34:56 A. I am saying it is a basis to question the model. And so one of the things that I think is needed is a theory to go along with why is it that the age and age-squared variables have the opposite sign to what they would typically have in wage regressions.
01:35:11 So it may be the case that there is a reason to think, for these defendant companies, that is the relationship between compensation and age. It is a different sign than Dr. Leamer obtained when he did his

01:35:26 year-by-year company-by-company regression and was able
01:35:30 to include job title in those regressions.
01:35:33 So there is a different relationship between
01:35:37 age of compensation being measured in his conduct
01:35:40 regression than he obtained when he was able to control
01:35:42 for more of the factors and -- that affect compensation.
01:35:54 Q. In paragraph 165 on the next page you say,
01:35:56 "Dr. Leamer has not provided an explanation for why the
01:36:00 unusual results are reasonable in this market setting."
01:36:03 Is it your position that Dr. Leamer has not
01:36:05 provided any explanation for what you describe as the
01:36:10 counterintuitive signs on age?
01:36:15 A. I don't recall anything that he said that
01:36:17 explains it. I thought actually more that I -- it
01:36:22 seemed that he was dismissive of the wrong signs, and I
01:36:27 think inappropriately so, because it is important to
01:36:29 look into them and figure out what is going on and
01:36:32 what's driving the wrong signs.
01:36:35 But I think the more persuasive thing is the
01:36:39 fact that he got different signs in one form of a wage
01:36:42 regression when he was able to control for things that
01:36:44 matter than he got in his conduct regression when he's
01:36:47 not able to control for those things.
01:36:51 Q. Did you read Dr. Leamer's most recent
01:36:54 deposition?

01:48:08 THE WITNESS: Statistical significance generally depends on what the -- the circumstances is, and why someone is referring to it. It could be -- certainly pertains to the reliability of results based on a coefficient that is not measured with any statistical significance. There are other measures of reliability for the -- an overall regression.

01:48:36 MR. GLACKIN: Q. Is it necessary for a regression result to be statistically significant in order to be evidence of something to an economist?

01:48:43 MR. KIERNAN: Object to form.

01:48:55 THE WITNESS: Again, it depends on what it is you are trying to measure and what conclusion you are trying to draw. If you are trying to draw a conclusion about a specific coefficient, and that coefficient is not measured with statistical significance, it matters crucially.

01:49:09 If you are trying to draw a conclusion about a specific coefficient from a well-specified regression, but not all of the variables in the regression are measured with statistical significance, if the one you care about is, and the regression is properly specified, then the insignificance of other variables may not affect your results.

01:49:28 MR. GLACKIN: Q. So are you saying that

01:49:29 the -- it is necessary for the coefficient you care
01:49:35 about, to use your phrase, are you saying it is
01:49:36 necessary for that coefficient to be statistically
01:49:40 significant in order for it to be evidence of
01:49:46 anything?
01:49:47 A. I think, yes. To say that there is
01:49:52 undercompensation measured by conduct, you need the
01:50:02 conduct variable to be negative and significant --
01:50:04 (Reporter clarification.)
01:50:04 THE WITNESS: To say that there is
01:50:04 undercompensation caused by conduct, you need the
01:50:04 conduct variables to be negative and significant, and
01:50:05 you also need it not to flip sign and other reasonable
01:50:08 specifications.
01:50:08 MR. GLACKIN: Q. What is your support
01:50:13 for -- in the literature for your contention that
01:50:17 the variable you care about has to be statistically
01:50:20 significant in order to be evidence?
01:50:22 A. Again, econometrics textbooks that talk about
01:50:26 inference from regression analyses. That one of the
01:50:29 first tests that you learn as an economist is a test for
01:50:32 significance of a variable. And it allows -- what
01:50:36 allows you then to draw an inference that the variable
01:50:38 had a specific positive or negative relationship to the
01:50:43 left-hand side variable.

01:50:46 Q. Which one of those textbooks says that the coefficient you care about has to be statistically significant at the 95 percent level in order to be evidence of anything?

01:51:01 A. The textbooks generally say that the level of significance may be something that is chosen by an economist doing the analysis, but that the generally agreed upon levels are typically 5 percent or 1 percent or .1 percent. There is nothing in a textbook I think that dictates what that level would be, but 5 percent is certainly generally agreed upon.

01:51:30 Q. What do you mean 5 percent is generally agreed upon? Where can I find that?

01:51:38 A. It is my recollection from reading various textbooks that talk about statistical inference that essentially say something very similar to what I have just told you. That to -- that determining a level of statistical significance may vary case to case, depending on the richness of the data. But generally, 5 percent is what is typically used by economists. And it's consistent with other things that I have read where economists typically use 5 percent, or less.

01:52:15 Q. You said that choosing a level of statistical significance depends on the richness of the data. How many observations, effectively, does this dataset have?

01:52:26 A. For certain variables it has either nine or ten
01:52:30 observations. And it is that restriction that limits
01:52:32 the amount of information that is in the regression.
01:52:35 Q. In your experience, as an econometrician, what
01:52:42 effect does the limited number of observations have on
01:52:47 the likelihood of producing a regression that achieves
01:52:50 statistical significance at the 95 percent level?
01:52:53 MR. KIERNAN: Object to form.
01:52:55 MR. GLACKIN: Q. In case it was unclear, I
01:52:57 meant in this case.
01:53:01 A. So there are --
01:53:02 MR. KIERNAN: Objection.
01:53:02 THE WITNESS: -- two things that matter for
01:53:03 statistical significance. How -- the distance between
01:53:06 your observation -- the observed result and zero, and
01:53:10 the number of experiments that you have that give you
01:53:12 faith that you've done enough experiments that what you
01:53:14 are seeing is a meaningful difference from zero, as
01:53:18 opposed to just an outcome that could happen because
01:53:22 we've just done a few experiments.
01:53:24 It's the two things together, both the number
01:53:26 of experiments and the magnitude of the results.
01:53:30 Ultimately in this case, we don't have a statistically
01:53:32 significant result for the conduct variable.
01:53:34 MR. GLACKIN: Q. I guess my question is,

02:04:19 interval around every coefficient, and generally we're
02:04:24 interested in whether zero is inside the confidence
02:04:27 interval.
02:04:28 Q. So you are agreeing with me, correct?
02:04:31 A. Yes. I'm agreeing with you that a coefficient
02:04:34 can move in either direction, but statistical
02:04:37 significance says we can't conclude that it is different
02:04:40 from zero.
02:04:41 Q. Right.
02:04:41 MR. KIERNAN: If you are going to switch gears,
02:04:43 I'd like to take a break. Whenever you are going to
02:04:45 switch gears. We've been going about an hour and seven
02:04:48 minutes.
02:04:50 MR. GLACKIN: Okay. Let me wrap up. Unless --
02:04:52 if we really.
02:04:53 MR. KIERNAN: No, no, no. Go ahead. If you
02:04:54 are going to wrap up.
02:05:07 MR. GLACKIN: Actually, let's take a break.
02:05:08 Off the record.
02:05:09 MR. KIERNAN: Okay.
02:05:09 THE VIDEOGRAPHER: This is the end of video
02:05:10 No. 3. The time is 2:05 p.m. We're going off the
02:05:13 record.
02:05:17 (Recess taken.)
02:17:15 THE VIDEOGRAPHER: This is the beginning of

02:17:17 video No. 4 in the deposition of Dr. Stiroh. The time
02:17:20 is 2:17 p.m. We're back on the record.
02:17:24 MR. GLACKIN: Q. Dr. Stiroh, are you
02:17:25 familiar with the difference between type I and
02:17:27 type II error as it relates to statistics?
02:17:31 A. Yes.
02:17:31 Q. Okay. What is the difference between a type I
02:17:33 and type II error?
02:17:38 A. Accepting a hypothesis when it is -- sorry.
02:17:42 Rejecting a hypothesis when it is true is type I and
02:17:46 accepting it when it is false is type II.
02:17:48 Q. Okay. So a type II error in this case would be
02:17:52 to accept the hypothesis of zero effect when it is, in
02:17:59 fact, false, correct?
02:18:01 MR. KIERNAN: Object to form.
02:18:09 THE WITNESS: Yes. If your hypothesis is zero
02:18:11 effect and you accept that, yes.
02:18:15 MR. GLACKIN: Q. Do you agree that there
02:18:18 is a relationship between -- the inverse
02:18:23 relationship, in fact, between type I and type II
02:18:25 error depending on the threshold of statistical
02:18:29 significance that is chosen?
02:18:32 A. I do.
02:18:33 Q. Maybe you could explain that, in layperson's
02:18:35 terms.

02:18:39 A. I think you've done a good job. There is an inverse relationship between the level of significance and -- which is the probability of making a type I error and the probability of making a type II error. And so, yes, they go in different directions. If you are looking for significance at 1 percent, then there is a bigger chance of making a type II error.

02:19:00 Q. So in other words, the higher a threshold for statistical significance you set with respect to type I error, the greater a chance that you are going to wrongly accept the hypothesis of zero effect, right?

02:19:19 MR. KIERNAN: Object to form.

02:19:23 THE WITNESS: The greater the threshold for statistical significance, then the greater the probability of a type II error, which would be to reject the null hypothesis when it is true, where the null hypothesis is of some significant effect.

02:19:43 MR. GLACKIN: Q. The type II error would be to accept the null hypothesis when it is false, right?

02:19:50 MR. KIERNAN: Object to form.

02:19:50 THE WITNESS: I think we're thinking two different null hypotheses. That you fail to find evidence of a significant effect where the effect may be different from zero. I think we are saying the same

02:20:06 thing there, just choosing to say it in different words.

02:20:09 MR. GLACKIN: Q. Let me read you something
02:20:11 and maybe this will clear things up. Do you agree
02:20:13 with the following statement: By increasing the
02:20:15 type I error rate, the type II error rate, the
02:20:17 probability of accepting the null when it is false,
02:20:20 is lowered. Do you agree with that statement?

02:20:25 A. By increasing the type I error rate, yes. I
02:20:28 do.

02:20:30 Q. In other words, lower the threshold for
02:20:32 statistical significance.

02:20:33 A. I agree with that statement.

02:20:34 Q. Okay. In selecting a 95 percent threshold
02:20:41 here, did you consider the type II error rate?

02:20:46 A. Yes.

02:20:46 Q. How did you consider the type II error rate?

02:20:48 A. In a couple of different ways. First, when
02:20:50 looking at significance at a 5 percent level, it's
02:20:53 fairly standard in economics, and it's fairly standard
02:20:56 in even litigation economics to use that, which means
02:20:58 that also the attendant type II error rate is also an
02:21:02 acceptable error rate in the majority of economic
02:21:06 analyses.

02:21:06 The other way to evaluate whether it is a type
02:21:08 II error rate is to look at other specifications. And

02:21:11 the fact that the conduct -- alleged impact flip sign, positive to negative, and in the specifications that I do that we talked about earlier where you interpreted as overcompensation, those are just showing the other sign on the conduct variables.

02:21:29 The fact that you could get what looks like either overcompensation or undercompensation with minor changes to the specification is consistent with there, in fact, being no measurable impact. It's not a type II error. Where really there is undercompensation associated with conduct, and it's just not measured with precision, in fact, we really don't have evidence that there is any, because sometimes it's positive and sometimes it's negative.

02:21:57 Q. Did you do anything to evaluate the relative costs, in the statistical sense, of the two kinds of error here?

02:22:05 MR. KIERNAN: Object to form.

02:22:14 THE WITNESS: I'm not sure really what you mean by that. I think in a textbook, you might say you consider the costs of being wrong. Here, the cost that Dr. Leamer has alleged is about $3 billion associated with him finding undercompensation, that certainly would be the cost to the defendant, I don't know if it is subject to tripling, but of him being wrong in this

case. And I have shown that small changes in specification lead to the opposite result, which is consistent with, in fact, there being no impact.

MR. GLACKIN: Q. How, as a matter of statistics, does one consider the relative costs of the two different kinds of error? And if you could point me to something -- I'm asking you in a general sense, and then if you can point me to some authority that would explain that, that you agree with, I'd appreciate it.

MR. KIERNAN: Object to form.

THE WITNESS: I don't know that there is something in a general sense that you evaluate the cost. It is in my view what is the cost of being wrong. And here it is measured, because it's a dollar value that is being attributed to the conduct at issue. And if, in fact, there is no impact, that dollar value is measured at $3 billion.

MR. GLACKIN: Q. So that would -- the cost of accepting the null when it is false, which is type II error, would be $3 billion to the class, correct?

MR. KIERNAN: Object to form.

THE WITNESS: I think that is wrong because of -- got various other specifications that show that

02:23:51 the -- there is not always undercompensation.

02:23:54 If every specification showed some sort of
02:23:56 undercompensation, then maybe we could put a bound on
02:23:59 what the -- the cost of the null being wrong in one
02:24:03 direction. But it could go in either direction. The
02:24:06 conduct, if it is, in fact, no impact, then you would
02:24:10 expect to see what we do see, where sometimes it looks
02:24:13 positive and sometimes it looks negative.

02:24:15 But I don't think it wrong to measure the
02:24:17 impact on the class of being wrong at the $3 billion.
02:24:19 Because what the lack of statistical significance is
02:24:23 telling us is that we don't have confidence in that
02:24:25 being the correct number.

02:24:27 MR. GLACKIN: Q. So I'm trying -- you
02:24:31 know, let's -- I'm trying to isolate this discussion
02:24:33 so I can have an understanding of what you
02:24:36 understand type II error to be. And I'm -- what I'm
02:24:40 asking is, would the type II error here be
02:24:45 $3 billion to the class?

02:24:47 If type II error is committed, if the null is
02:24:51 accepted when it should be rejected, is the cost of that
02:24:55 $3 billion to the class, just as the cost is $3 billion
02:24:58 to the companies if the null is accepted when it ought
02:25:02 to be rejected? It works both ways, doesn't it?

02:25:05 MR. KIERNAN: Object to form.

02:25:06 THE WITNESS: I don't think it does to the identical magnitude. Because we've got a dollar value being put forward as damages if, in fact, there are no damages, we know what that is. If, in fact, the outcome, the impact is just different from what is being measured, then you are saying if there is a type II error, we don't actually know what the value is supposed to be. We know one measured value.

02:25:25 But what I've got in my report, with a different specification, is sometimes a positive, sometimes a negative value. So it is not right to say that the cost to the class is $3 billion. There is no evidence that there is any cost to the class because it does that flip-flopping of values.

02:25:40 MR. GLACKIN: Q. Do you mention type II error anywhere in your report?

02:25:43 A. I don't think I mention either type I error or type II error, but I may just be misremembering.

02:25:51 Q. What does it mean, in a statistical sense, to consider the relative costs of type I and type II error?

02:25:56 A. You asked me that already. I'd need to see the source that talks about considering the statistical cost, and I think the answer would be as I said a moment ago. I think it depends on the context and what the analyst has in mind.

02:26:10 I think in this case, it's the dollar value that is being put on the table that is not supported by statistical significance.

02:26:17 Q. Is there a procedure that one -- statistical procedure that one undertakes to measure the relative costs of type I and type II error?

02:26:27 MR. KIERNAN: Object to form.

02:26:27 THE WITNESS: There may be. I think that it would be specific to the situation at hand. And where it may matter is in policy prescription. And you would consider, you know, what if we make a policy based on the outcome, and it turns out that the outcome is wrong. What would be the cost to the economy? Would we grow more slowly? Would we be thrown into a recession or would nothing bad happen?

02:26:51 And if nothing bad happens because you are wrong, there is a low cost of being wrong. If something really bad would happen, if we're going to cause a depression, cause a worldwide recession, that's a pretty high cost of being wrong. That's how I would interpret the sentence that you've been reading to me, but I don't know what the author had in mind for that.

02:27:12 MR. GLACKIN: Q. It's Dr. Kennedy. And I thought you said before he was a clear writer, so....

02:27:18 MR. KIERNAN: No question.

02:27:24 MR. GLACKIN: Q. Can you explain, in
02:27:25 layperson's terms, what the 5 percent confidence
02:27:32 level -- excuse me. That's the wrong -- I'm mixing
02:27:35 up terms -- what the 5 percent threshold for
02:27:38 statistical significance means in terms of the
02:27:39 likelihood that the null hypothesis will be
02:27:46 rejected?

02:27:48 A. Okay. Five percent significance level means
02:27:52 that you would reject the null hypothesis -- you asked
02:28:00 me to say it in layperson's terms, and I'm not doing a
02:28:03 good job of that. I'm using all the same terms.

02:28:08 If in a repeated random draws of an experiment,
02:28:13 so that you could do the same type of experiment many,
02:28:15 many times, 5 percent of the time you may get a result
02:28:18 that is very different from the expected result. And I
02:28:21 could do one better just by giving an example.

02:28:24 If you roll two dice and add up the amount, the
02:28:28 expected value is seven. If you roll two dice and you
02:28:32 add it up and you get four, you don't conclude from that
02:28:34 that the dice might be loaded because you got something
02:28:38 different from seven. You've run one experiment and you
02:28:41 got something lower. It's not so unusual.

02:28:43 If you ran this experiment many, many, many
02:28:45 times, and you always got a number lower than seven,

02:52:20 MR. STONE: Object to the form.
02:52:21 MR. GLACKIN: Q. Are you familiar with the statement that a competitive labor market sets wages equal to the value of the marginal product?
02:52:29 MR. KIERNAN: Same objection.
02:52:35 THE WITNESS: I'm not familiar with it written that way. I think I would want to see what else is written around it. Maybe it's the same as if -- or the intention is the same as if it were marginal revenue product.
02:52:46 MR. GLACKIN: Q. So if I inserted the word revenue in there, then you would -- it would be something that you were familiar with?
02:52:51 A. In that case it's more aligned with my recollections.
02:52:54 Q. Okay. This is a way of defining real wages, right?
02:52:59 MR. KIERNAN: Object to form.
02:53:00 THE WITNESS: No.
02:53:02 MR. GLACKIN: Q. It's not?
02:53:04 A. Correct.
02:53:04 MR. KIERNAN: Object to form.
02:53:05 MR. GLACKIN: Q. What do you think it is?
02:53:07 A. It is a theoretical statement that in a
02:53:10 competitive labor market, the wages would be aligned

02:53:12 with the marginal revenue product if, in fact, that is
02:53:15 the right way to interpret that, of the workers. Real
02:53:18 wages are defined by the -- the buying power of the wage
02:53:24 that an employee receives.
02:53:28 Q. It's completely normal for economists to talk
02:53:31 about real wages being determined by the labor markets,
02:53:35 isn't it?
02:53:36 MR. KIERNAN: Object to form.
02:53:40 THE WITNESS: Economists may talk about real
02:53:42 wages being defined by a labor market. That is not the
02:53:46 same thing to -- as opining that each worker is paid
02:53:51 their marginal revenue product. But it's also a
02:53:55 theoretic construct, a way of thinking about markets.
02:53:58 It's not necessarily what firms actually do, since firms
02:54:03 set nominal wages, not real wages.
02:54:06 MR. GLACKIN: Q. Can you refer us to any
02:54:07 studies of the labor market that have intentionally
02:54:10 focused on nominal wages, not real wages, either
02:54:14 theoretical or empirical?
02:54:17 A. As I sit here, I can't call one specifically to
02:54:19 mind. But there are, and I have a footnote -- I don't
02:54:21 think I cite anything specifically -- but certainly
02:54:25 there are studies of wages where there would be wage
02:54:27 regressions run on nominal wages rather than real wages.
02:54:31 Which you choose depends on what you are trying to

02:54:33 answer.

02:54:34 In this particular case, we're looking at whether firms have undercompensated their employees by the wage that they set. And I think, quite specifically, we're not looking at market wages. And I take that because I think that Dr. Leamer has stated specifically he's looking at wages paid to the specific employees in these firms, and he is not opining that these are meant to be market wages, or what he's measuring is undercompensation relative to a market value.

02:55:03 So I think we're -- it's two different things. But to the -- for the specific question that we're trying to answer in this case, which is whether or not the firms set wages in a way that undercompensated employees, what they set is nominal wages.

02:55:17 Q. So is it your opinion, as an economist, that if employers do not have perfect information about future inflation, then the labor market determines nominal wages not real wages?

02:55:34 MR. KIERNAN: Object to form.

02:55:34 THE WITNESS: That is not an accurate statement of my opinion as an economist.

02:55:39 MR. GLACKIN: Q. Why not?

02:55:42 A. For a variety of reasons. One, in connection

02:55:45 with this case I haven't done an analysis of how the
02:55:47 market determines wages. We've looked at how these
02:55:51 seven firms have set wages to their employees.
02:55:53 To the best of my recollection, there is not a
02:55:56 claim that the wages are different from a market level
02:55:59 outcome. A market level of wage. And there has been
02:56:02 no, as far as I can tell, discussion of what the market
02:56:05 wage is or should have been.
02:56:07 Instead, there is a discussion of whether these
02:56:10 specific employees, or the employees of these seven
02:56:13 firms, are undercompensated in a four-and-a-half year
02:56:18 time frame relative to benchmarks outside that time
02:56:21 frame.
02:56:31 Q. So are you saying that the defendants did not
02:56:35 consider inflation in setting compensation at their
02:56:39 companies?
02:56:39 A. I'm not saying that, no.
02:56:41 Q. So you agree with me, they did consider
02:56:43 inflation in setting compensation at their companies?
02:56:45 MR. KIERNAN: Object to form.
02:56:46 THE WITNESS: To the best of my recollection,
02:56:48 there is information, or a thought, that there is
02:56:50 certainly the possibility that the defendants considered
02:56:56 inflation and expected inflation when setting
02:56:59 compensation. It is my opinion that they don't have

02:57:02 clarity into what inflation will be, and that the outcomes that Dr. Leamer is measuring that are on the left-hand side of his regression include an impact on compensation that is outside of the defendants' control.

02:57:12 And instead, if we restrict the regression analysis to be just those variables inside the defendants' control, the nominal compensation, that has a significant impact on his results. Changing nothing else, but instead of saying that he's going to measure real wage or real compensation on the left-hand side, if he were to do nominal compensation, which is what the defendants actually set, then damages, I think, come down by about half in the way that he's modeling it. In the model that he's set forth.

02:57:42 And that means -- maybe I have the number wrong -- but roughly half of the $3 billion is coming from a variable that is completely outside of the defendants' control. And if even if there were a conspiracy, there isn't something put forward to say how are the defendants able to control inflation in a way that causes half of the damages in this case.

02:58:06 MR. GLACKIN: Q. So in other words, your argument is that if the defendants cannot predict with certainty, as you use that word in paragraph 175, what inflation was going to be in the

02:58:19 coming year, then inflation should be taken out of
02:58:22 the regression analysis, even if the defendants
02:58:24 actually did consider inflation when setting
02:58:27 compensation? That's your argument?
02:58:29 MR. KIERNAN: Object to form.
02:58:29 THE WITNESS: No. Not necessarily. My
02:58:32 argument is that half of the damages that Dr. Leamer
02:58:36 calculates come from the impact of including real
02:58:39 compensation on the left-hand side, which means that
02:58:42 half of his damages are coming from a variable that the
02:58:46 defendants can control.
02:58:49 Moreover, it's coming from a variable that was
02:58:52 different from expectations within the damage period.
02:58:55 It's not to say there wouldn't be some other way of
02:58:59 accounting for that, but Dr. Leamer hasn't proposed a
02:59:01 way of accounting for expected inflation or to try to
02:59:04 differentiate what was the compensation that the firms
02:59:06 tried to set, subject to the alleged conspiracy. And
02:59:10 what was the compensation that was the result, separate
02:59:12 from the alleged conspiracy, that just happened because
02:59:15 the inflation was different from expectations.
02:59:19 (Discussion off the record.)
02:59:52 MR. GLACKIN: Q. Can you point us to a
02:59:53 single authority for the proposition -- let me
02:59:56 strike that. I'll make it broader.

02:59:58 Can you give us a single example of one of the studies you mention that studied nominal wages so we can understand the circumstances when it's appropriate to do that and when it's not appropriate to do it?

03:00:08 MR. KIERNAN: Object to form.

03:00:08 THE WITNESS: So I don't know that reading a single study is going to tell you when it is appropriate to do it and when it is appropriate not to do it. What makes it appropriate is your theory, and whether you are accurately testing the theory.

03:00:19 And in this case you are not testing the theory of whether defendants suppressed wages when what you are measuring -- when half of what you are measuring comes from the impact of a variable that is not within the defendants' control.

03:00:31 MR. GLACKIN: Q. So the answer is, you can't give us any authority for the approach you've taken, correct?

03:00:37 A. That is incorrect. The answer was that a single authority will not tell you when it is appropriate and when it is not appropriate in a way that may be meaningful for this case.

03:00:46 What is meaningful for this case is what is the alleged mechanism by which this -- the alleged conspiracy was supposed to suppress wages. And that is

03:00:55 not what is being measured in Dr. Leamer's analysis.
03:00:57 Q. Okay. Give me any authority of any kind, if
03:01:00 you have one, that supports the approach you take in
03:01:03 paragraph 175.
03:01:06 MR. KIERNAN: Object to form.
03:01:09 MR. GLACKIN: Q. If you've got more than
03:01:10 one, give me your favorites.
03:01:12 A. I don't know that I can tell you off the top of
03:01:13 my head a title of an authority that is going to talk
03:01:18 about nominal versus real wages.
03:01:21 Certainly from what I can recall, the
03:01:24 discussion of nominal versus real wages depends on the
03:01:27 context. And then it is my opinion in this case that
03:01:31 the way that the conspiracy has been alleged is not a
03:01:37 conspiracy to suppress compensation. The allegation is
03:01:41 that there has been a suppression of compensation, and
03:01:43 if it is things within the power of the alleged
03:01:46 conspirators, that has to be nominal compensation.
03:01:49 There may be other ways to account for
03:01:50 expectations of inflation, or whatever individual firms
03:01:54 may have taken into account when they set wages that may
03:01:57 be different from the way other firms took information
03:02:01 into account. But what I am pointing out in this
03:02:03 section is that half of Dr. Leamer's damages come from
03:02:07 his assumption that what was being suppressed was --

what was deliberately being suppressed was real compensation, and I don't think there is support for that.

Q. Are you arguing that information about the consumer price index is subject to a lag?

MR. KIERNAN: Object to the form.

THE WITNESS: I don't think I'm arguing that. I think that inflation happens on a regular basis, and information is published on that. If the CPI is published, backward looking, so looking at what inflation has been over a period of time, it is not forward looking.

And so to the extent that it is then incorporated into analysis, it takes into account first of all, information that may not have been available at the time the compensation was set, and second, information that is not within the control of the defendants.

MR. GLACKIN: How long have we been going, do we know?

THE VIDEOGRAPHER: Total or just this tape?

MR. GLACKIN: This tape.

THE VIDEOGRAPHER: Forty-six minutes.

MR. GLACKIN: Do you want a break or should we keep going?

03:03:16 THE WITNESS: Well, we've stopped. Let's take
03:03:17 a break for five minutes and then come back.
03:03:19 MR. GLACKIN: Sure.
03:03:20 THE VIDEOGRAPHER: This is the end of video
03:03:21 No. 4. The time is 3:03 p.m. We're going off the
03:03:24 record.
03:03:25 (Recess taken.)
03:13:07 THE VIDEOGRAPHER: This is the beginning of
03:13:08 video No. 5 in the deposition of Lauren Stiroh. The
03:13:14 time is 3:13 p.m. We're back on the record.
03:13:19 MR. GLACKIN: Q. Dr. Stiroh, is it
03:13:20 possible to include too few variables in a
03:13:23 regression model?
03:13:25 MR. KIERNAN: Object to form.
03:13:27 THE WITNESS: I would think so, yes.
03:13:29 MR. GLACKIN: Q. Why is that?
03:13:32 A. If you have omitted a variable that is
03:13:35 necessary for a regression, and then you have included
03:13:39 too few. That there should be another variable there.
03:13:43 Q. Is it possible to include too many variables in
03:13:46 a regression?
03:13:51 A. Well, at some point the regression will break
03:13:54 down and the computer won't run it if you've got too
03:13:57 many variables. So yes, that is also possible.
03:14:01 Q. Why does the computer break down and you can't

03:24:06 at the coefficients as they are measured.
03:24:23 MR. GLACKIN: Q. Are you aware of the
03:24:24 following rule of statistics: If you omit a
03:24:27 variable, no variable with a T value less than the
03:24:31 omitted variable can change sign. Are you aware of
03:24:33 that rule?
03:24:38 MR. KIERNAN: Object to form.
03:24:40 MR. GLACKIN: Q. Axiom might be a better
03:24:43 word than rule.
03:24:46 A. No variable with a T statistic less than the
03:24:48 what?
03:24:49 Q. Omitted variable can change sign.
03:24:52 A. Less than the T statistic of the omitted
03:24:54 variable or less than the omitted variable itself?
03:24:58 Q. If you omit a variable -- so if you take a
03:24:59 variable out.
03:24:59 A. Okay.
03:25:00 Q. Any -- let me put it a different way.
03:25:02 Any variable with a T value that is less than
03:25:04 the T value of the omitted variable cannot change sign.
03:25:07 Do you understand that?
03:25:10 MR. KIERNAN: Object to form.
03:25:18 THE WITNESS: I don't understand that.
03:25:20 MR. GLACKIN: Q. Okay. Are you aware that
03:25:21 as a matter of statistics, choosing to omit a

03:25:24 variable with a high T value is likely to have the
03:25:27 most disruptive effect on a regression analyses?
03:25:53 MR. KIERNAN: Object to form.
03:25:53 THE WITNESS: So if a variable has a high T
03:25:55 value and is explaining a lot of the variation, and if
03:25:59 you omit it, then if there is nothing now explaining
03:26:02 that variation, it may be disruptive.
03:26:06 What I have done, though, is not just taken --
03:26:08 I haven't taken out his variable and omitted it, I've
03:26:12 replaced it with other variables that are conveying the
03:26:15 same information, just instead of putting in a number
03:26:18 four, I put in the numbers one plus one plus two.
03:26:22 So I haven't -- my specification is not
03:26:27 omitting any of Dr. Leamer's variables. It's replacing
03:26:32 them with the same information broken out so that the
03:26:35 component parts can have individual effects.
03:26:38 MR. GLACKIN: Q. Well, how does the
03:26:40 statistical significance or P value of the variables
03:26:43 that you added compare to the P value of the
03:26:46 variable you took out?
03:26:50 A. So let me -- I need to have both of them in
03:26:56 front of me. So I need to find where it is that I have
03:27:00 Dr. Leamer's regression.
03:27:03 Q. That's at Roman V.2.
03:27:05 A. Thank you.

03:27:41 Q. So for the record, it might be helpful to walk through this, since we're referring back to it anyway. So if we're looking at Roman V.2, which is the variable of Dr. Leamer's that you have removed?

03:27:54 A. So I think, again, not removing it, replacing it with the component parts. And it is the log of the total number of new hires.

03:28:09 Q. And that has a P value of .00001, right?

03:28:17 A. Yes.

03:28:18 Q. And is that 1 a function of rounding by the computer program? Is it possible there is actually some more leading zeros there that have been omitted?

03:28:26 A. No. Look up above, you see some that are -- have four zeros in a row.

03:28:32 Q. So this is statistically significant to the 99.999 percent level?

03:28:42 A. As an explanatory variable, that that is what -- showing that it is statistically significant and negative on compensation, which is also unusual.

03:28:55 And so what happens is that if you actually split that into its component parts, and you get parts that aren't measured with statistical significance, that causes you to question whether that statistical result is meaningful in any way when it's not associated with the -- it's not broken up into the various individual

03:29:20 component parts.

03:29:21 Q. So thank you for that information. But my very simple question is, so this variable, the one you have replaced is statistically significant to the 99.999 percent level, correct?

03:29:34 A. Correct.

03:29:35 MR. KIERNAN: Object to form.

03:29:35 MR. GLACKIN: Q. Okay. So let's go now to your Roman VI.7, which is where you show the variables that have replaced this variable, and let's identify those variables.

03:29:52 A. So the ones that replace it are first -- the fifth one down, where I interact conduct with the log of the total number of DNCC new hires. And that means that the new hires that were at the firms with which any -- the employee of a firm that had a DNCC agreement.

03:30:12 And then further down, there is just the log, total number of DNCC new hires, the log total number of non-DNCC new hires, and that is -- those are the replacement variables.

03:30:31 Q. So just those three variables?

03:30:33 A. That replaced the one that Dr. Leamer had, yes.

03:30:37 Q. Okay. And so let's start with the first one, which is Conduct, star, Log (Total Number of DNCC New Hires).

03:30:48 So that is statistically significant only at a
03:30:51 92 percent level, right?
03:30:53 A. Yes.
03:30:54 Q. Ninety-one and change, actually, right?
03:30:57 A. Yes.
03:30:58 Q. And then Log (Total Number of DNCC New Hires),
03:31:03 that is only statistically significant to the level of
03:31:07 82 percent and change, correct?
03:31:08 A. Yes.
03:31:09 Q. And the next one is only -- which is Log (Total
03:31:12 Number of non-DNCC New Hires) is statistically
03:31:17 significant to 94 percent and change, correct?
03:31:21 A. Yes.
03:31:22 Q. So none of those three variables is
03:31:24 statistically significant at your conventional level of
03:31:29 95 percent, correct?
03:31:29 A. Correct.
03:31:38 Q. Now, in another one of your regressions, you
03:31:41 selected -- you replaced the new hire variable with
03:31:46 median income of the tech sector. Do you recall -- you
03:31:48 know what I'm talking about?
03:31:50 A. Yes.
03:31:51 Q. Okay. I don't know if you need to look at the
03:31:56 outputs, but you discuss this in footnote 282.
03:32:04 A. Uh-huh.

03:32:09 Q. Why is the median -- so what is median income from the tech sector? What is that variable measuring?
03:32:18 A. Let me just get the footnote in front of me.
03:32:28 MR. KIERNAN: I'll object to form.
03:32:36 MR. GLACKIN: Q. And Dr. Stiroh, any time you don't understand any of my questions, just let me know and I'll try to rephrase it. Okay?
03:32:42 A. Okay. So again, to the best of my recollection, the reason Dr. Leamer gave for including the new hires variable in the form that he included it was to, I think, account for industry effects. And I may be misremembering that.
03:33:05 So what I'm noting is that when you include the new hire variable on the right-hand side, you've got a variable that has mixed up in it the impact of conduct, if any, and hires that should be completely separate from conduct. And if the point of including it was to control for some sort of industry level effects, then I'm looking at are there other ways to do that?
03:33:30 I think sort of consistent with what something Dr. Leamer proposed of -- that he would be open to other specifications, so long as his various categories of things he wanted to control for were controlled for. And so the point of median income would be to look at an exogenous measure of a factor that has not gotten a

03:33:57 variable that's endogenous to the conduct at issue.

03:34:01 Q. Which one do you think is more economically relevant to the regression, new hires variable or median income from the tech sector?

03:34:13 MR. KIERNAN: Object to form.

03:34:14 THE WITNESS: So it depends what it is that you are trying to conclude. Dr. Leamer's results are highly dependent on including his new hires variable in the form that he has it. And to me, that doesn't make sense.

03:34:27 If what he is trying to measure is the impact of alleged suppression of do not cold calls, then it's got to matter the magnitude of the hiring that the agreement firms were doing. And that has to have a different effect from the magnitude of hiring that firms without -- that don't have an agreement has.

03:34:49 So the purpose of splitting it apart is to allow there to be an estimated effect, if, in fact, there is one, of the conduct at issue.

03:34:58 And the fact that it shows up with less significance when it's split apart actually is what casts doubt on the validity of his results. This is another specification that has that same impact. That if you replace what -- as I recall, he said that he included it because it was an industry effect he wanted

03:35:20 to control for, replace it with a different variable
03:35:22 that could also control for the industry effects, and
03:35:26 the damages that he is measuring completely switch sign,
03:35:31 then there is -- again, it shows that the results that
03:35:34 he has are unreliable, and that they are not connected
03:35:37 with the alleged conduct.
03:35:41 So the fact when I split apart the variables,
03:35:43 and as we just went through, it looks like those
03:35:46 variables are either less significant or not
03:35:48 significant, that's an indication that what he is
03:35:51 calculating isn't an impact on -- of conduct -- on
03:35:56 compensation related to conduct, it's something else.
03:35:59 Whatever was driving it was a mixture of hiring from
03:36:02 firms that allegedly couldn't call defendant firms and
03:36:05 hiring from other firms where there is no such
03:36:07 agreement.
03:36:42 MR. GLACKIN: We'll mark this next in order,
03:37:24 please.
03:37:34 Actually, I don't have copies for you, Counsel.
03:37:37 MR. KIERNAN: Tell me what it is.
03:37:38 MR. GLACKIN: October report. Can we go ahead?
03:37:40 And I don't have an extra copy.
03:38:01 Thanks, David, I didn't think I'd need it.
03:38:18 (Whereupon, Exhibit 2931 was marked for
03:38:18 identification.)

03:38:19 MR. GLACKIN: I'm handing you 2931, which is a copy of Dr. Leamer's October 1st, 2012 report which he outlines his regression methodology.

03:38:30 You'll see at paragraph 142 he lists the categories of variables he believes ought to be included in the regression. And it follows over onto the next page.

03:38:40 So could you just read -- since I don't have a copy, I gave you my only copy, could you read the titles of the categories of the variables that ought to be included.

03:38:49 MR. STONE: Can I get the exhibit number again. I'm sorry.

03:38:55 THE REPORTER: 2931.

03:38:56 MR. GLACKIN: Can you read them out loud, please.

03:38:58 THE WITNESS: Okay. Dr. Leamer says that the variables in his regression Figure 20, from his October 1st, 2012 report, can be divided into five categories that he names Conduct Effects, Persistence, Worker Effects, Industry Effects, and Employer Effects.

03:39:19 MR. GLACKIN: Q. Can you now please read out loud the last sentence of paragraph 143.

03:39:26 A. Yes. The last sentence of Dr. Leamer's paragraph 143 reads, "The effects that vary across

03:39:34 employers are global revenue, relative to the global
03:39:37 workforce and the rate of growth thereof, the number of
03:39:40 new workers hired relative to the previous year's
03:39:45 workforce, and indicators that allow for distinct
03:39:48 differences in compensation for each employer."
03:39:50 Q. So Dr. Leamer is using the new hire variable as
03:39:53 an employer effect and not an industry effect, correct?
03:39:56 MR. KIERNAN: Object to form.
03:40:19 THE WITNESS: I'm not sure. It may be that
03:40:21 that is how he is intending it, to be an employer
03:40:24 effect. I had thought in deposition testimony he said
03:40:26 that it was an industry effect.
03:40:29 I don't see that he's got a list of what ones
03:40:31 he meant to be the industry effect, but it, in my view,
03:40:37 seems that it could be an industry effect. If he wants
03:40:40 to opine that it is irrelevant as an industry effect,
03:40:44 then I'll take that under consideration.
03:40:46 MR. GLACKIN: Q. Well, he says there that
03:40:47 it's an employer effect, right? In the last
03:40:49 sentence in paragraph 143. Will you not agree with
03:40:53 that?
03:40:53 MR. KIERNAN: Object to form.
03:40:54 THE WITNESS: I don't know that he does. He
03:40:56 says the effects that vary across employers -- so maybe
03:41:00 that is what he intends by that to be -- that to be an

03:41:04 employer --
03:41:06 MR. GLACKIN: Q. Right. Effects that vary across employers. So in other words, the whole answer you just gave us about median tech sector wage being replacement variable is wrong, right? Because you are taking out a variable that measures employer effects, and you were replacing it with a variable that you think measures industry effect, right?
03:41:27 MR. KIERNAN: Object to form.
03:41:30 I don't know why you are raising your voice, by the way, so if you can just settle down.
03:41:34 MR. GLACKIN: Let the record reflect I'm not raising my voice.
03:41:38 MR. KIERNAN: You were raising your voice, Brendan.
03:41:40 MR. GLACKIN: No, I'm not.
03:41:41 MR. KIERNAN: You have been, just now.
03:41:43 MR. GLACKIN: Stop trying to interrupt the questioning, David.
03:41:44 MR. KIERNAN: I'm not. I'm not.
03:41:47 THE WITNESS: To the best of my recollection, Dr. Leamer had testimony that indicated to me that he had thought his new -- total new hires variables for the defendants was meant to capture some sort of an industry

03:41:58 effect.

03:41:58 And to the extent that that is how he interpreted it, an alternative would be median wage. If he interpreted it as some other -- to be some other effect, then -- specific to the employers, then I think the breaking of it apart into the component parts so that you can isolate hiring that is being done by firms with which each defendant has a do-not-cold-call agreement, and firms with which it has no such agreement, is relevant to the analysis to show that what is being measured as conduct is not coming from the conduct at issue, it's coming from some other effect in the model.

03:42:40 MR. GLACKIN: Q. So you are saying you stand by your previous explanation for why you included tech sector income to replace -- I should say you stand by your prior explanation for why you replaced the new hire variable with tech sector income?

03:42:56 A. As I sit here today, that is the best of my recollection, that Dr. Leamer had given testimony that indicated he had thought that to be an industry effect. But I, you know, obviously don't have the full record in front of me here.

03:43:10 Q. So you stand by the answer?

03:43:11 A. I do, yes.
03:43:12 Q. Where is that testimony?
03:43:14 A. I believe it was in deposition testimony, but it's not something that I can now recall to mind.
03:43:19 Q. Well, you discussed this issue in footnote 282 of your report, right?
03:43:25 A. I do.
03:43:27 Q. Why don't you cite to that testimony?
03:43:32 A. I think that the analysis and the specification testing stands on its own without being connected to a specific part of Dr. Leamer's testimony.
03:43:44 It is a showing that the -- it still shows a sensitivity of Dr. Leamer's results. The way that I had described it, to me, I thought there was a reason that Dr. Leamer might agree with this change if he views his new hires variable as an industry effect.
03:44:05 If it is not intended as an industry effect, and is meant instead to be a firm effect or employer effect, I think that there are still better ways to do it, not then by using the median wage, but by doing the breaking apart.
03:44:19 So footnote 282 is still -- is in this section looking at breaking apart the new hires variable, if I have misattributed the reason to do that to something that Dr. Leamer has said that he did not intend to say,

03:44:31 then the analysis of breaking apart the variable, I
03:44:34 think, is -- doesn't take out anything from his
03:44:38 regression, it replaces it just with the component
03:44:42 parts. If he had intended it as an industry effect,
03:44:45 then it's still very sensitive to that industry effect.
03:44:50 Q. Okay. You can put 2931 aside, whatever it is.
03:44:53 We're done with it.
03:44:57 How do you calculate P value from the standard
03:45:00 errors?
03:45:07 A. I don't remember the formula as I sit here. We
03:45:09 can look it up in a book. Let's let the book testify as
03:45:12 to what that formula is. I don't have it in my head.
03:45:19 Q. Can you tell what the standard error is on a
03:45:22 coefficient by looking at the P value?
03:45:31 A. I don't remember if you can -- I think you
03:45:33 would need -- I think you need another piece of
03:45:39 information. But I just now, as I sit here, can't
03:45:41 remember what the formulas are to go from one to the
03:45:44 other.
03:45:46 Q. Can you refer to any textbook in econometrics
03:45:49 that recommends reporting P values without standard
03:45:51 errors?
03:45:52 A. I think you've asked me this this morning. I
03:45:55 don't intend to be hiding something by the fact that I
03:45:57 put them on the page and not all of the other regression

03:46:01 output. As far as I know, that the regressions were
03:46:03 produced and I've given you the form. Certainly
03:46:06 Dr. Leamer can run my regressions and see what the
03:46:09 standard errors are to the extent that he feels that
03:46:11 those are more meaningful, or you feel or anybody feels
03:46:14 that they are more meaningful. For the conclusions that
03:46:17 I drew, the P values were sufficient for me. They are
03:46:20 giving the same general type of information.
03:46:23 Q. My question was, can you refer to any textbook
03:46:26 in econometrics that recommends reporting P values
03:46:28 without standard errors? Can you refer to any such
03:46:31 textbook?
03:46:35 MR. KIERNAN: Object to form.
03:46:37 THE WITNESS: I don't know. I haven't looked
03:46:38 for that specific phrase and whether there is a
03:46:42 recommendation of always reporting both, when it seems
03:46:45 to me they give the same information. But I haven't
03:46:47 looked for that.
03:46:57 MR. GLACKIN: Q. The P values for testing
03:46:59 of coefficients are zero, right? Testing for the
03:47:02 probability. They might be zero, right?
03:47:05 A. It is relevant -- relevant for that null
03:47:09 hypothesis, correct.
03:47:11 Q. Does the P value tell you anything about
03:47:13 testing the hypothesis that two or more coefficients are

05:27:21 the firm would be compelled to raise compensation
05:27:25 everywhere.
05:27:25 An outcome that would be consistent with the
05:27:27 theory, but not allowed for in the damages, is that some
05:27:31 individuals do have information about their market
05:27:34 worth, and do negotiate wages, regardless of whether
05:27:37 that should or does propagate through. And so I'm
05:27:42 pointing out that there are -- there is a group of
05:27:45 employees who did receive a bump in compensation, that I
05:27:50 think based on the information that I've read was
05:27:53 specifically designed to keep them at Google.
05:28:00 To the extent that that is their market worth,
05:28:02 there isn't a basis, then, to say they should have been
05:28:05 paid even higher than that to keep them at Google. If
05:28:09 the bump in salary or the bump in compensation was
05:28:12 the -- a retention bump, then there isn't a basis, I
05:28:15 think, to say, oh, it would have been even higher if
05:28:18 instead of just the threat of going to Facebook or a
05:28:21 startup, there is also a threat that they might have
05:28:23 gone to Intuit or Intel.
05:28:28 Q. Have you done anything to calculate their
05:28:30 market worth?
05:28:36 A. I looked at the amount that they receive. I
05:28:39 understand it's not a claim being made by Dr. Leamer
05:28:43 that they are being paid differently from their market

05:28:45 worth or there is some sort of market suppression of
05:28:48 wages. And so all the information we have would be what
05:28:52 are each -- what is each individual currently earning,
05:28:55 and could they be worth more to another company.
05:28:58 And there isn't a basis to assume that having
05:29:03 information where they are being paid something
05:29:05 specifically to retain them, in the face of recruiting
05:29:08 from some companies, that they should have been paid
05:29:11 even more if we layer on that cold calling, not just
05:29:16 recruiting, but just cold calling from a few more
05:29:18 companies.
05:29:19 Q. So you say that there is no basis to assume
05:29:21 that. What have you done to establish that they would
05:29:25 not have been paid more if there had been cold-calling
05:29:30 from more companies? What have you done to establish
05:29:32 that?
05:29:34 MR. KIERNAN: Object to form.
05:29:34 THE WITNESS: So I have done, essentially, my
05:29:35 report, where I look at the model that is put forth by
05:29:39 Dr. Leamer where he gets a negative coefficient on
05:29:44 conduct, and from that says that there is
05:29:46 undercompensation to the class. And I do a variety of
05:29:49 specification changes and say that that variable, what
05:29:52 he is measuring, cannot properly be attributed to the
05:29:55 conduct at issue.

05:29:58 The same model can show very widely differing
05:30:01 results. And so it is my opinion that he has not
05:30:04 established that there is either impact or an amount of
05:30:07 damages associated with the conduct. And I think that
05:30:10 is relevant to this paragraph here.
05:30:14 MR. GLACKIN: Q. So I think we're actually
05:30:16 back to my first question. And now I think I have
05:30:19 the answer to my first question, which is, your
05:30:21 critique as to these particular employees is the
05:30:23 critique that you've made throughout the report as
05:30:26 to Dr. Leamer's overall methodologies. And there is
05:30:28 not something special that you've done to establish
05:30:31 that he's wrong as to these [redacted] employees?
05:30:34 MR. KIERNAN: Object to form.
05:30:35 THE WITNESS: So certainly as I said, the
05:30:36 critique in the rest of my report applies to these
05:30:39 employees. I think there is something special about
05:30:41 them in that we do have additional information. Where
05:30:45 there are cases in the rest of the case where we don't
05:30:48 have the information we might want about what
05:30:50 information is conveyed, why did -- why it is conveyed,
05:30:54 why compensation changes are being made.
05:30:56 With these [redacted] employees, we do have that
05:31:01 information, and so it is a special consideration of
05:31:04 those employees where we see fairly large changes in

05:31:08 their compensation. We don't see other people that were
05:31:10 in the same -- I forget what the name that Google gives
05:31:15 them, but the same degree in 2007, matching up with
05:31:20 those compensation changes.
05:31:21 So we don't see a ripple effect, we don't see a
05:31:24 propagation, and we don't have a reason to think that
05:31:27 another layer of threats from -- or just potential
05:31:31 threats from companies that have never been real threats
05:31:33 in the past would have caused a different outcome when
05:31:37 we do see Google responding to a specific threat from
05:31:40 specific types of companies.
05:31:42 MR. GLACKIN: Q. So you say we have no
05:31:43 reason to believe it. Have you done something to
05:31:45 determine that it's not true, other than the
05:31:47 critique that is contained in the rest of your
05:31:49 report?
05:31:50 A. No, it is the critique that I have done in the
05:31:52 rest of my report that says that. That tells me that
05:31:56 the lack of belief is actually a reasonable belief.
05:32:02 Let me clarify. That's not going to make sense
05:32:05 when you read it.
05:32:07 MR. GLACKIN: Stop. Stop. Stop.
05:32:08 No further questions.
05:32:09 THE VIDEOGRAPHER: This is --
05:32:10 MR. KIERNAN: Before we go off the record, why

05:32:12 don't we just have one short meeting. Break.

05:32:16 MR. GLACKIN: If -- no. I'm not going to agree
05:32:19 to go off the record. We're just going to stay on the
05:32:21 record.

05:32:22 MR. KIERNAN: Stay on the record.

05:32:28 MR. GLACKIN: I mean, if this is about, like --
05:32:29 let me just say I'm going to object to you guys
05:32:32 conferring with the witness and then coming back and
05:32:34 examining her in the middle of the deposition, I object
05:32:36 to you doing that. It's improper.

05:32:38 MR. STONE: I thought we were at the end of the
05:32:40 depo.

05:32:40 MR. GLACKIN: Well, if we're at the end of the
05:32:42 depo, then we can go off the record and --

05:32:42 MR. STONE: You just told me you were done.

05:32:44 MR. KIERNAN: You just passed the witness.

05:32:45 MR. GLACKIN: What I'm going to object to is
05:32:47 you conferring with her. If you guys want to go confer
05:32:51 and come back and ask questions, that's fine.

05:32:53 MR. STONE: Where does that come from, Brendan?

05:32:55 MR. GLACKIN: It's tampering -- it's conferring
05:32:56 with the witness in the middle of their testimony.
05:32:57 Where does that come from? Really?

05:33:01 MR. STONE: Where does our ability to take a
05:33:02 break and go off the record after you finished your

I, Gina V. Carbone, Certified Shorthand Reporter licensed in the State of California, License No. 8249, hereby certify that the deponent was by me first duly sworn and the foregoing testimony was reported by me and was thereafter transcribed with computer-aided transcription; that the foregoing is a full, complete, and true record of said proceedings.

I further certify that I am not of counsel or attorney for either of any of the parties in the foregoing proceeding and caption named or in any way interested in the outcome of the cause in said caption.

The dismantling, unsealing, or unbinding of the original transcript will render the reporter's certificates null and void.

In witness whereof, I have hereunto set my hand this day: December 16, 2013.

___X___ Reading and Signing was requested.

_______ Reading and Signing was waived.

_______ Reading and signing was not requested.

____

GINA V. CARBONE

CSR 8249, RMR, CRR, CCRR